ACQUISITIONS USING ALL REVENUES

PRIORITY AREA	Entity	Year Closed	OSAC Number	Acres	Value Used	County Share
Columbine Ridge		1986	86-44	0.4		
First Natl/Bowen	FH	1992	90-48	17.7	330,000	330,000
R-1 Bellview Acres	FH	1995	90-69	5.0	29743	29,743
Lakehurst West	FH	1995	91-19	8.4	0	
Sect 14	FH	1992	92-13	0.04	3,500	0
Chambers	FH	1995	94-042	1.3	66,000	66,000
Dutch Creek Village	FH		76-21	11.4	0	0
Dutch Creek Village	FH		78-19	8.1	0	0
Dutch Creek Trade	FH			14.0	70,452	70,452
Misc SB 35				18.2	0	0
Ken Caryl						
Ken Caryl Ranch Park	KC	1978	77-24	6.3	6,000	6,000
Colrad	KC	1991	90-71	11.7	575,000	575,000
Open Space						
Bergen Reservoir	OS		90-70		576,000	576,000
South Plains Total				887.6	12,940,028	12,899,928
Total				40858.0	201,783,436	157,698,300

Witness Testimony

Robert Narracci

Transcript of Rezoning #98015154RZP1

LAKE CEDAR GROUP, LLC

Before the Board of County Commissioners

July 13, 1999

HOLLOWAY: Okay. We'll go into item 15, #98015154RZP1. Rezoning. Applicant, Lake Cedar Group, LLC. Location, 21079 Cedar Lake Road, Section 4, Township 4 South, Range 70 West. Map Number 107. From Agricultural-Two, A-2, Mountain Residential-One MR-1 to Planned Development. Purpose to construct a consolidated television broadcasting tower for digital television. Approximate Area 79.6 Acres. Case Manager Tim Carl. Continued from 2/2/99 3/10/99, 4/27/99, 5/27/99 and 6/29/99.

LAWRENCE: Tim, you've changed.

HOLLOWAY: Yeah.

NARRACCI: Thank you, Madame Chairman. Mr. Carl is currently enjoying his honeymoon and I'm sitting in for him today. I was going to spend about 30 seconds going over an addendum that Mr. Carl had prepared before he left. Basically it's a summary and reiteration of current staff comments in the areas of conformance with the land use plans and compatibility inability of the proposal to meet the minimum standards of our zoning resolution and also the recent RF measurements on Lookout Mountain. With regard to the inability of the proposal to meet the minimum standards of the zoning resolution, staff believes that the interlaced guyed wires ensure that a failure of either tower will most likely result in the failure of both towers. Most tower failures occur because

of either climatic conditions such as ice or wind or by human error. Human error is most likely to occur when working on a tower thus the most critical period will be during the erection or removal of a tower. These towers will be within 110 feet of each other and if failure occurred could result in a collapse onto nearby occupied structures which are not owned by the Lake Cedar Group LLC. In regard to the recent RF measurements taken on Lookout Mountain it is projected that the RF contribution of the proposed tower when added to the existing RF levels will exceed County adopted standards. I would like at this time to refer any questions you may have to either Russell Clark or Mr. Jim Hart who is the County's technical engineering consultant. And that concludes staff comments, Madame Chairman.

HOLLOWAY: Alrighty. Thank you. Do you have a staff report for us?

NARRACCI: The addendum?

HOLLOWAY: Alright. That's why I couldn't find it.

NARRACCI: You do have it?

HOLLOWAY: Okay. Any questions for staff?

SHEEHAN: Okay. So what's the status on the property ownership issue and easement on the roads?

CLARK: I believe the County Attorney would probably have a better answer for that than I would at this time.

HUTFLESS: I'm sorry.

SHEEHAN: On the road issue and the property ownership?

Witness Testimony

James MacDermott

proposal, technically don't work for our proposal not business. Technically don't work for our proposal from John F.X. Browne who is going to stand up and speak further today. And without taking the time to walk through that laboriously I would like to remind you that it's there and ask that if you have questions after today you consult that. With that I'm going to turn this over to Jim MacDermott and to John Browne to talk about those alternative sites and alternative technologies and to talk about repeaters, amplifiers and transmitters. Thank you.

MACDERMOTT: Good morning, Commissioners. I've been sworn. I'm Jim MacDermott. I'm the general manager of Lake Cedar Group. And I am probably the least technical person in this room. I'm certainly one of them. So I'm going to try to talk to you as a layman, as a manager, not from the technical perspective. If you have technical questions John Browne will be happy to address those. He'll participate in this process. Let me start out with the question of the other non-broadcast technologies that are out there and that have been suggested as an alternative to Lake Cedar putting up a tower. All of those other technologies are subscription services. People have to pay for them. The broadcasters are licensed by the Federal Communication Commission to provide free over the air television to the entire market area that they are licensed to serve. And serve is a word that both the broadcasters and the community take seriously. When there are major disasters be they weather related or anything else it's the broadcast stations that the community turns to for information and guidance. When local government has messages they need to deliver to the community, messages of emergency or whatever it is, it's the broadcast stations

that they turn to. And the broadcasters take a very serious...accept that service responsibility very seriously. Those other services reach 60 to 70% of the community. Broadcasters cannot forgo those other 30 to 40% of the people that we serve. And in many cases it's those 30 to 40% of the people who can least afford to be without television. I'm not going to talk further about the other services. They are simply not germane to what it is we do or what it is we are licensed to do. With respect to where we are when the stations began this process five or six years ago well before Lake Cedar was conceived the first question we asked was where can we locate? And we looked at things like the eastern plains, Lookout, Mount Morrison, Eldorado, Squaw Mountain and opened it up for discussion for anything else we could think of. Obviously since we're here today we selected Lookout for many of the same reasons that Lookout was selected as a transmission site in the early 1950's. It's simply the best place to reach the entire community from without any technical problems or minimizing technical problems. And perhaps that's why it's called Lookout. I don't know the background of why...of the name but it certainly offers a magnificent view of the entire metro area. Before I talk about how we evaluated early on the other sites let me just say that there are several constraints that we operated under. Broadcasters were required to simultaneously transmit their analog signal and their digital signal, something we had to allow for. Frequencies weren't the choice of the broadcasters, the frequencies the channel which the broadcaster was going to broadcast on was assigned by the Federal Communication Commission with the overall object of avoiding conflicts nationwide. And that

was not a process that they completed without a great deal of debate and anguish. In Denver those assignments for digital television are Channel 16 for KUSA, Channel 17 for KMGH, Channel 18 for KRMA, Channel 19 for KTVD, Channel 20 already exists with KTVD in their analog mode. Channel 34 was assigned to KWGN and Channel 35 was assigned to KCNC. From a consumer's perspective, where the consumer's antenna is oriented is of importance to the consumer. Practically speaking and why antenna farms grew up in the first place is it's desirable to locate as many broadcast facilities in one location as possible so that the consumer has an antenna that points in one direction and can get and receive a good signal. From a technical standpoint on the digital side or on any side adjacent channels i.e. Channel 16 through 20 must be co-located in order to avoid interference between the channels. They need to be in the same place. Additionally because of frequencies there's a requirement that the two public radio stations be located where Channel 6 is located, where KRMA is located. And finally in our discussion Channel 20 comes into play because locating Channel 20 any further north at any site further north than Lookout Mountain would likely cause interference with Channel 21 in Fort Collins. And finally in the constraints that we are operating under the broadcast quiet zone established over Table Mountain allows the preexisting Channels 2, 4, 6, 7 and 9 to broadcast over that area at their present levels. Any relocation of those lines to a different location would require that they then protect Table Mountain, not put a signal over Table Mountain, which would then restrict the service that they can render to the community on the other side of that signal because there would be

no signal going over Table Mountain. When we sat down and looked at all of those alternatives and where we were going to...and what we were going to do let me deal first with the eastern plains. Out east in order to deliver a signal comparable to the community as what we deliver from Lookout we'd have to have a tower that was at least 2,000 feet tall. The area east of Denver contains numerous instrument approach take off and landing paths for DIA as well as Jeffco, Front Range and Centennial airports. Simply put the FAA would never approve a 2,000 plus foot tower in that area east of Denver. It's not a practical site. And we looked at Squaw Mountain. Squaw can't deliver a signal to Boulder. John Browne will talk in a moment about translators and repeaters so I'll pass on that for the moment. Squaw Mountain is also much further from the station when you have to do maintenance, when you have to get there, when you have a problem. It has difficult winter access. Last winter 1 of the radio stations that's up there was off the air for 24 hours because they couldn't get to their transmitter in a snow storm. And finally there is a desire amongst this group of broadcasters to be in control of their own future. And they don't own any property in this go-around. Nor do they on any of these other sites. Mount Morrison offered slightly less signal coverage. Again the broadcasters don't own the property. It's more difficult to access and it's slightly farther from the studios. Eldorado offers a terrific view of the metropolitan area. We estimated that the loss of coverage from there was about 9,000 homes. It's twice the distance from the studios downtown for the stations to get there. It's an hour and 15 minute trip in good conditions. There is a railroad main line that crosses the only road going

up to that site. When we went to view the site we waited 45 minutes while an eastbound train was parked on the siding to allow 2 westbound trains to pass. A railroad employee who was there told us that that happens seven or eight times a day. Access to somebody's transmitter in times of emergency particularly from the perspective of getting information out to the community is significant to these stations. The only way up there is a 4-wheel drive road. There would be signal problems south of there particularly in Green Mountain. There would be shadowing in Golden, Lakewood, Ken Caryl and Boulder. Some of the stations wouldn't be able to get a line of sight signal, a microwave signal to their studios downtown because of in the city things that block it. Besides those issues that I've discussed we concluded from all of that that as before Lookout was the best site and that's why we're here today, when you take all of those dominoes and put them in place. There are issues related to additional as far as the ultimate technologies in satellite, not excuse me, not satellite but repeaters and the like. There are issues related to additional towers and locations but as far as the technology and the availability of that technology I would like to have you John Browne talk to you about that and answer any technical questions you may have with respect to the overall evaluation. I'll be happy to answer any questions you have now or when John is finished.

HOLLOWAY: Any questions?

BROWNE: Good morning. I'm John Browne and I've been sworn in before. I understand that in the public hearing the last public hearing which I did not attend that there was an issue raised regarding the use of boosters or

Witness Testimony

Tim Carl

available eating and rental facilities in the club. Therefore, although Mr. Chairman I believe I personally could hear this case with an open mind, the Jefferson County Attorney's Office and I have concluded that because of the location of my property and because of my position on the Mount Vernon Country Club boards, I am disqualified from acting as a Planning Commissioner on this case, and therefore, I am recusing myself.

ROSASCO: Thank you. Is there any other comments? Mr. Carl, would you introduce your team...

CARL: Sure.

ROSASCO: ...and proceed with your comments.

CARL: Thank you. To my left I have the technical consultant that the County has acquired through the assistance of our regulations. His name is Jim Hart. He will be here to provide technical assistance to us on matters related to this request. On my right or to your left, I have from our Planning and Zoning Department Russell Clark who is also here to provide any assistance in terms of technical issues, has also been instrumental in working and coordinating with the community in concerns to RF levels that have been measured or have taken place on Lookout Mountain, and I also believe or understand that Craig Sanders is here with the Health Department, but I'm not certain where he is, but we do have a member of the Health Department that is present if there are any questions in that regard. I would like to be brief in my presentation. We have a lot of people here that have a lot of comments to say. There's going to be a lot of discussion. It's my understanding that the Commissioners--have read my comments, have them before you. The comments are a reflection of the Planning and Zoning

Department as a staff. So what I'd like to do is just kind of hit some of the highlights of this request and then allow any time that questions may exist and then move from there. Let me start first by orienting both the Planning Commission and the community as to the location of this request. Before us we have a map of the Jefferson County area and what we'll be looking at specifically is an area within the Lookout Mountain region. I will have some details that show some of the zoning as well as an aerial photo of the surrounding area. So let's kind of move into that. Let me zoom in. What's noted in red, and I'll very liberally try to show you what that looks like, but this is the request that we're looking at. What we're looking at today is a rezoning request presented by the Lake Cedar Group and I'll talk about that in a moment. The rezoning request involves 79.6 acres. The current designation of the zoning on the property you can see is reflected in two colors – A-2, which is located in this area and then a portion of the property is zoned MR-1 or Mountain Residential-One. What we're looking at today is a rezoning request to rezone the property to Planned Development. Lake Cedar Group proposes to install a new 850-foot tall broadcast tower and support equipment located on Lookout Mountain. The tower would be designed to support a variety of antennas including High Definition Television, analog TV, broadcast FM radio and low-powered telecommunication devices. The tower is proposed to be guyed, and I will have an illustration to show you that was also included in your packet. The guyed tower again will house five HDTV antennas for Channels 4, 6, 7, 9 and 20. There will be three analog antennas for Channels 4, 6 and 20. Two of the Channels, 4 and 6, this is to facilitate the removal of their towers currently which accommodate both 4 and 6, and there will be a multiplexed FM antenna, which I believe could

accommodate up to 12 FM stations. There will be two auxiliary DTV antennas for backup purposes, and again low-powered telecommunication devices. At this point, it's our understanding that the tower will be marked and lighted to meet Federal Aviation Administration requirements. Upon construction of the new tower, the towers accommodating Channels 4 and 6 will be removed. When analog TV broadcasting ceases, currently slated for 2006, the towers accommodating Channels 7 and 9 will be removed. The removal of the towers has been stipulated in the proposed Written Restrictions, which I believe the Commission has as well as a proposed development agreement to be entered into between the County and Lake Cedar Group. This request includes a transmitter building, which can be up to 32,250 square feet of total floor area to accommodate equipment associated with the devices for the tower. Before I move into that, just for purposes of... Well... You know you look at these and you think their great, and then you look at them over the screen they're not as great, but this gives you an indication again of the aerial photo for this area. I think we'll have probably more detail to show you as we go through this presentation both from the community and from the applicant, but the general location of the towers are in this location. This is the eastern slope of Lookout Mountain and that just kind of gives you a perspective of the area. Let me see... Let me see if I can zoom out here and we can just kind of take a look at some of the details included in this request. This just kind of gives you an illustration of what the proposed building will look like as well as a proposed ice bridge that will connect to the tower. I think I've got an illustration here that shows the overall tower configuration. Let's see if we can show that to you. Let's see if we can zoom out. Again, the tower is proposed to be 850 feet and that's from the tip of the antenna installed

on a star mount down to the base of the bottom, and then again the ice bridge that will be connecting to a transmitter building. Let me get into some of the key points associated with this request just briefly. There have been some concerns that have been raised by the community and the County regarding nonionizing electromagnetic radiation on Lookout Mountain. The Telecommunication Plan notes that new telecommunication facilities should be located and designed to prevent exposure to RF or Radio Frequency in excess of current, projected or suggested standards. There was some indication that RF levels exceeded established Federal standards on Lookout Mountain, and on October 29, 1998, testing occurred for RF levels by the FCC. The County's technical consultant on this matter, Hammett and Edison and members of CARE were present to observe the measured RF levels. Results of the test indicated that RF levels exceeded established standards in four publicly accessible areas, and I'll get into that in just a moment. As part of this process, we are required to notify the community as well as community groups about the request. Sixteen community groups were notified of this request. We had received responses from CARE, Genesee Foundation, Panorama Estates Homeowners Association, Mount Vernon Country Club Metropolitan District and several community activists in the area as well as many local residents that live near these facilities. At last count, I think there were over 300 letters stating opposition or vehement concerns about this request. We've also received letters in support of this request which have been included, and I believe that they're in conjunction with a letter that was sent out from Channel 6 asking members to respond to this proposal. They've been included in your packets. The applicant also held a community meeting on May 28, 1998. More than 150 people attended the meeting to express outrage and

concern of the proposed rezoning application. The predominate issue stated by the community included comments on health impacts associated with RF levels and NIER standards as well as consolidation requirements and the need for such a facility on Lookout Mountain. Now, given the uniqueness of this request, there's two community plans that we have to look at. These community plans are guidelines for us in helping us make determinations. They set aside policies, which we look at that set a framework for us in terms of how we look at this. The first plan that we looked out was the Central Mountains Community Plan, and we evaluated this request looking at various policies applicable to the proposal. That has been included in your packet. Some of things that I'd like to just briefly mention include that there is a concern that exists about the proposed bridge connecting the transmitter building to the broadcast tower. I believe it is the intent of the applicant to discuss that in more detail. We do have a concern about the proposed building and the ice tower or the ice bridge located closer, if that can be accommodated so we'd like to have a little more discussion about that as it relates to this proposal. I briefly touched on this but I want to reiterate under the recent measurements that were done on October 29. The County's technical expert expressed concerns on levels of existing RF in the general location of the property affected by this rezoning. On October 19, the County's technical expert, Hammett and Edison whose the consultant to Lake Cedar Group, and a technical expert with CARE took various measurements on the property. At that time, initial readings indicated that RF levels exceeded standards established by the Federal Government. Subsequently, on October 29, 1998, the FCC again, as I reiterated previously, came out and along with our technical expert, Hammett and Edison, and members of CARE took readings, and

initial measurements indicated that there were several hotspots that exceeded Federal standards. The measurements indicated that there are at least four publicly accessible areas with power density levels exceeding the limits established by continuous exposure to RF energy in uncontrolled environments, and these four general areas were northwest of the KOSI/KKHK site or more specifically along Cedar Lake Road near the tower accommodating KOSI and KKHK; south of the KMGH TV Channel 7 site, along the lower main driveway of KMGH TV Channel 7 near what's called the green building along the upper driveway of KMGH TV; east of the KRMA TV Channel 6 site along Colorow Road; and southeast of the KHIH FM site in the forested site near KHIH FM tower. Now it's our understanding that the FCC has talked with these FM stations to take necessary steps to reduce their levels and this has included reducing the power levels as well as other techniques such as fencing and posting of signs noting that there is RF in the area. Again, what I want to do is probably... This will be discussed as we go through this hearing tonight and hold off while we listen to more people discuss that. The other component that we look at is the Telecommunications Land Use Plan. Again, this is a guideline for land use decisions and this helps us guide decision making process in terms of these types of requests, and we have evaluated this request looking at issues such as tower siting, visual and noise, engineering, interference and health. Just a couple things that I want to discuss. One of the policies under tower siting is that the applicant must show that their proposed equipment cannot be accommodated and function as required by its construction permit or license without unreasonable modification on any other existing facility. What the applicant did do is notify other towers not only in Jefferson County but in other areas whether they could accommodate

their facility, and the County did receive responses from Mount Morrison, Squaw Mountain and Eldorado Mountain. Squaw Mountain operates in Clear Creek County and can accommodate broadcast facilities such as those proposed with this application. The facility is located at an elevation of 10,800 feet, making it the highest broadcast site in this region. A follow-up discussion with Clear Creek Planning and Zoning indicated that the Squaw Mountain site is zoned for broadcast facilities. Eldorado Mountain indicated that they may be able to accommodate the facilities described in the letter by Lake Cedar Group, but it's our understanding that the facilities on Eldorado Mountain are at a maximum capacity and the facility would need to be amended to allow for an additional tower, and this process would require either rezoning or special use review. Mount Morrison also indicated that they could accommodate a tower that can safely support five digital television stations and associated transmission lines. This may be possible; however, the site does not currently have a tower that could accommodate the equipment associated with this proposal. We do know that an application is pending that would allow for the construction of a new tower on Mount Morrison. The application has not yet been approved by the Board of County Commissioners. Again, reiterating again under the health concern about the RF level, the radio frequency level, the issue still exists. Even if the stations turn down their power levels as I eluded to and as the FCC has indicated that these stations are doing, the issue we're looking at is the overall cumulative level for RF exposure and that includes with the proposed tower and if it will exceed established Federal standards, and we don't have any indication at this time if, in fact, these stations have turned down their levels as has been indicated. We have not yet gone out to do further testing

or measurements. Now, it's our understanding that the FCC is planning on coming back out on December 16 to do further testing to determine what compliance is and if it has met their standards. Unless it can clearly be shown that the cumulative effect of RF exposure will be less with the proposed tower, the situation on Lookout Mountain continues to be a health and safety issue, and for these reasons, this proposal cannot meet this policy requirement established in the Telecommunications Land Use Plan. Now the last component that we look at in addition to the Plan policies is the compatibility issue. Siting and placement of the consolidated tower will occur in an area that has historically maintained these types of facilities. This request creates a new tower on Lookout Mountain placed on the eastern slope, west of the ridge top. The tower will accommodate a multitude of antennas and ancillary equipment used in the operation of broadcasting and telecommunication. Design criteria has been incorporated into the proposal to reduce visual impacts associated with the transmitter building including terracing, color schemes and the use of materials. Dishes and auxiliary equipment mounted on a building will be painted to match the surrounding vegetation, topography. The placement of the tower and the building within the site occurs away from nearby residential development. The proposed consolidated tower in this location is compatible with the overall appearance and use of Lookout Mountain for telecommunication operations. The multi-use tower is located within a major use transmission area, which is in close proximity to other comparable structures, and so for all these reasons, the proposal can be considered compatible with the surrounding area. Our findings and recommendations for you tonight are that staff finds that this proposal is not in substantial conformance with the Central Mountains Community Plan or Telecommunications Land Use

Plan because it does not entirely conform to the policy recommendations associated with visual resources, hazards, public facilities, service, mountain site design criteria, tower siting and health. If the proposal is approved, it could comply with policy recommendations by meeting the conditions of approval identified under alternative decision. There are no known commercial mineral deposits existing upon the subject property, and the proposal is compatible for the reasons previously stated. So, for health and safety reasons stated above, staff's recommendation on this case, number 98015154RZP1, is that it be either continued to resolve the issues associated with RF levels on Lookout Mountain or denied. If the RF levels are resolved, we would recommend approval based on the conditions discussed under alternative decision and I'll read through those. There are seven. Condition 1 would be that the written restrictions and development agreement shall clearly establish a time frame for the removal of the towers associated with Phase II, Channel 7 and 9, when analog TV is phased out. The existing facility's buildings associated with the towers to be removed, this includes Channels 4, 6, 7 and 9 must also be removed unless it can clearly be shown why these facilities are needed in conjunction with the new tower. Yearly independent monitoring shall be established with the proposal and a fee to be paid by the consortium incorporated to cover cost such as monitoring. Noncompliance will result in penalties established under Colorado State Statutes. Any new antennas associated with the proposal or added in the future must receive the necessary permits from the Planning and Zoning Department and have all required information on compliance with County, State and Federal standards. The star mount shall be removed from the proposed tower to reduce the visual, aesthetic impact unless it can clearly be demonstrated why it is needed. The

Witness Testimony

Dr. Robert Cleveland

a minute and answer some questions. Thank you. I appreciate you coming all the way out for us, too. Do you have anything you want to offer to start with before we ask questions?

CLEVELAND: No, other than if I could briefly tell you what we have done up there. As has already been mentioned, we were out October 29th, and then we came back on December 16th, and I believe your staff has a copy of the summary report of December 16th - a survey that we did, and primarily, we were looking at three general areas up on the mountain, the public roads and other locations near the KOSI/KKHK FM tower. That was the first area generally, and then we looked at accessible areas near the KHIH FM tower, and thirdly, we visited the Channel 6/KRMA TV tower that also contains the two non-commercial FM stations. So we were basically on December 16th resurveying areas we had previously visited to try to see if the corrective actions we recommended had been taken.

ROSASCO: And it's our understanding... And we just received your report at 1 o'clock today. So we had a very limited time to look at it. I tried to read it as we sat here.

FOX: I haven't read it.

ROSASCO: Yeah, some of us have not even had a chance to. So we apologize for having you come out with that, but unfortunately, we couldn't get it beforehand. My understanding is that when you went back out in December there were still some problems, which you made some additional recommendations, and based on those recommendations, you feel that it is now a compliance situation?

CLEVELAND: That's right. Basically I think there may have been some misinterpretations of some of the areas that we had actually found high readings and where the fencing should be placed. So that, for example, on the property that's near the Channel 7 tower, the temporary fencing

was not far enough out to the edge of the sort of the plateau area there, and that needed to be taken care of. Also, a couple of other spots were pointed out to us where the levels were a little bit over the limits. These are a couple of areas we hadn't visited before, but they were very localized, as I think has been mentioned here before, and we recommended additional fencing at those areas, too.

ROSASCO: We had some testimony earlier. Do you believe to a reasonable degree of scientific--level of scientific study that all of the hotspots have been identified up on the mountain? Granted that you may--if you were to do everything on a one-foot grid, you might find some other ones, but overall is it reasonable to assume that all hotspots have been identified?

CLEVELAND: I would say so. We went to all the places that we thought logically you would expect to find potentially high RF areas, and the most--the one that we thought immediately that you might have a problem was the area near the Channel 7 tower, which appears to be basically in the main transmission beam from KOSI and the KKHK FM antennas. So that those areas I think is where you're going to find any significant RF. These other localized areas that we came upon, I think we have scanned those areas pretty well, and I'm not aware of any other places where we might find anything. If we were to find anything at any of these other spots, I'm sure it would be very close to the one that--if it were, you know, it might be 98 percent of the limit or something like that, but I wouldn't certainly expect to see anything that was substantially over the limit.

ROSASCO: And I assume that you've given some recommendations, fairly detailed recommendations about the fences. So maybe based on that, that is the answer to the question, but the extent of these hotspots, have you defined the lateral extent of each of the hotspots adequately?

CLEVELAND: Well, first of all, I wouldn't call all of these hotspots because on the Channel 7 tower property, or the property, U.S. West property I believe it is, that area is fairly wide on a dirt

roadway there. That's the area that's all been fenced in. I don't know if I'd call that hotspot because that's sort of a subjective term, but as far as the localized areas that might be a couple square feet or something like that, I think we've identified those as well as we can.

ROSASCO: Okay. So the actual localized areas on the order of a couple square feet, and you put this fence in a broader area to encompass all of those?

CLEVELAND: If possible, or in a couple of cases, it was necessary to reduce power.

ROSASCO: Okay.

CLEVELAND: For example, on Cedar Lake Road, it was necessary to reduce power in order to clear up that--there were a couple of hotspots there, and on the dirt roadway that is going up toward the Channel 7 property, there was an area that apparently cannot be fenced, and that was also required the reduction in power for KOSI and KKHK.

ROSASCO: Questions have been raised, and you've heard them, about what--other than the license renewal, what is there to police, sub-police, monitor, control, oversee, whatever, that the power reduction levels stay where they're at, or that another station, for example, doesn't boost their power? What is there in the procedures that you all supervise with the various operators that would give us assurance that this condition has been rectified and will remain, you know, remain in compliance?

CLEVELAND: Are you talking about the actual power, the transmitting power of the station and how that's monitored?

ROSASCO: Well, let's start with that one because that was the question that was raised by the members of the Commission about what assurance do we have that they don't turn it back up afterwards, for example.

CLEVELAND: Okay. I'm going to have to defer to Leo Serbo, who is our local engineer in charge here, about procedures that our field office has used for monitoring power because we don't do that in my office, and then I could come back and answer any questions.

ROSASCO: Okay. Well, let's keep you up here. We're not going to have you jump up and down a whole lot. Is there a requirement, and I'm a little unclear. I'm not sure... We're certainly talking about having a requirement for some form of monitoring, and, you know, the frequency of which and so on and so forth. We're still debating. Does the FCC require this type of RF monitoring as part of it licenses for these...

CLEVELAND: We don't require routine monitoring.

ROSASCO: Okay.

CLEVELAND: But we try to whenever... Well, actually this is a good example of when monitoring takes place because whenever there's an application of any sort for a site by covered transmitters, that's covered by our rules, then that could trigger an environmental evaluation, which means that particular applicant has to send in a statement to us verifying that there is compliance at the site. In order to do that, that applicant is going to have to do some kind of evaluation, monitoring, or whatever. So even if we don't do routine monitoring ourselves, this could be indirectly required, such as happened here, because of the DTV application. So the DTV application here triggered an evaluation of the site.

ROSASCO: It's the application itself that triggers it. When they go for their construction permit, that doesn't trigger a need for it?

CLEVELAND: Well that is it. The application for the construction permit is what triggers it.

ROSASCO: Okay. When they go forward with construction or anything else, that doesn't

trigger the need, does it, or does it?

CLEVELAND: No. The way our rules are written, and they're based on the requirements of the National Environmental Policy Act, which requires Federal agencies to take into account environmental issues that might have significance. So our rules are basically based on requirements of that Act. It requires us to look at the environmental significance so that it's not, for example... There's only when we are required to determine something or make a judgment or take an action that's when we're required to consider the environmental significance.

ROSASCO: And I'm really asking this question in part because if we consider monitoring, I'm trying to find out what all you require at this point to basically add that to our thinking as to what we might need to do.

CLEVELAND: Right. We don't require routine monitoring.

ROSASCO: Okay. Great. Are there other questions for Dr. Cleveland? See, I guess I took everything. So why doesn't the other gentleman from the FCC come up so I can get the answer to the question about the power levels. Okay. Sir, state your name for the record.

SERBO: My name is Leo Serbo. I'm the district director of the Denver field office for the FCC.

ROSASCO: Great. You've heard the questions and the testimony. The question is, obviously, what assurance do we have that the stations that turn the power down don't turn them back up or somebody else doesn't turn them back up and we get into another non-compliance situation.

SERBO: Well, we have actually made measurements from our office of the signal level from the stations in question. So we have a baseline measurement. So we can review that, you

Squaw Mountain Communications is a viable option for the Denver Broadcasters

6/24/99

To: Jefferson Country Commissioners
From: Squaw Mountain Communications, Inc.

At the June 17th,1999 Bear Creek Development, Mt. Morrison hearing, yet another untruth was stated about Squaw Mountain. That being, Squaw Mountain Communications can only have 2 towers with a maximum of 2,000 sq. ft. of building space.

The facts are:
Squaw Mountain Communications, Inc. has 3 Tower Sites Approved by Clear Creek County, as is clearly stated in the ODP(Official Development Plan) Case #159. Site B2 is approved for a 2000 sq. ft. building, Site C 2000 sq. ft. and Site A with a minimum of approximately 32,000 sq. ft. If we go into the ground, the square footage is unlimited. However, 36,000 sq. ft. should be more than sufficient to house all of the Broadcasters.

Therefore, as stated before, Squaw Mountain Communications, Inc. can accommodate as many Broadcasters as choose to move to Squaw Mountain Communications. (See the attached letter documenting the above facts from Squaw Mountain Communications' Attorney Charles Greenhouse, Clear Creek County's letter forthcoming.) The contact person at Clear Creek County is Lisa Leben 303-679-2362. Russell Clark with Jefferson County has a copy of the ODP if you wish to review it.

Squaw Mountain is a viable option for the Denver Broadcasters. To my understanding, there are no valid issues that preclude the Broadcasters from moving to Squaw Mountain.

Sincerely,

Victoria West

Victoria West
Squaw Mountain Communications, Inc.
Vice President, Sales and Marketing
303-894-9394
Fax 303-894-9099
E-mail westvictoria@hotmail.com

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Canyon Area Residents for the Environment	)	
Request for Review of Action Taken Under	)	DA 00-764
Delegated Authority on a Petition for	)	
An environmental Impact Statement	)	

Volume IV CARE EXHIBITS

FCC RECORDS ON LOOKOUT MOUNTAIN

in bates number order by unique 6 digit number

CARE obtained these records from the FCC authorized document provider, ITS and gave each document a unique number placed in the lower right hand corner. FCC records are cited by this bates number.

Documents in Bates Numerical Order

ENGINEER'S COPY

LAW OFFICES OF
KIRKLAND, ELLIS, HODSON, CHAFFETZ, MASTERS & ROWE
1776 K STREET, N.W.
WASHINGTON, D.C. 20006

TELEPHONE (202) 833-8400

CHICAGO OFFICE
KIRKLAND, ELLIS, HODSON, CHAFFETZ & MASTERS
PRUDENTIAL PLAZA

February 12, 1971

Mr. Ben F. Waple, Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: KOSI-FM, Denver, Colorado

Dear Mr. Waple:

On behalf of our client, Armstrong Broadcasting Corporation, licensee of the above-noted FM broadcast station, there is submitted herewith, in triplicate on FCC Form 301, an application for a construction permit to change the transmitter location of KOSI-FM, increase effective radiated power and increase antenna height. An extra copy of Section V-G is enclosed.

There is also enclosed our firm's check in the amount of $200 to cover the requisite filing fee.

Applicant is requesting a waiver of Section 73.207 of the Rules. However, the Commission's attention is called to the fact that there is being submitted simultaneously herewith a "Petition for Rule Making and Request for Expedited Action" requesting the institution of a rulemaking proceeding looking toward the substitution of FM Channel 244A at Steamboat Springs in place of Channel 265A.

Should any question arise concerning this matter, kindly advise the undersigned.

Respectfully submitted,

E. G. K.

Erwin G. Krasnow
Attorney for Armstrong
Broadcasting Corporation

EGK:ldr
Enclosures

000108

JULES COHEN & ASSOCIATES
CONSULTING ELECTRONICS ENGINEERS
WASHINGTON, D. C.

ENGINEERING EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
ARMSTRONG BROADCASTING CORPORATION
STATION KOSI-FM
DENVER, COLORADO

CH 266 100 KW 780 FT

February 5, 1971

JULES COHEN & ASSOCIATES
CONSULTING ELECTRONICS ENGINEERS
WASHINGTON, D. C.

ENGINEERING EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
ARMSTRONG BROADCASTING CORPORATION
STATION KOSI-FM
DENVER, COLORADO
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DENVER, COLORADO

CH 266 100 KW 780 FT

Engineering Statement

The engineering exhibit of which this statement is part was prepared in accordance with the Rules of the Federal Communications Commission and pursuant to the provisions of Sections V-B and V-G of FCC Form 301 on behalf of Armstrong Broadcasting Corporation, licensee of broadcast station KOSI-FM, in support of an application for permit to change the KOSI-FM transmitter location, increase effective radiated power and increase height. No change in frequency, principal city or main studio location is involved. The applicant proposes to continue remote control of KOSI-FM from the main studio at 1565 Elmira Street, Aurora, Colorado.

Proposed Transmitter Location

The transmitter is proposed to be relocated to Lookout Mountain, the present site of all Denver television stations and of four of the Denver FM broadcast stations. Lookout Mountain is approximately 12 miles due west of the center of Denver and approximately two miles south-southwest of the center of Golden. The proposed KOSI-FM location is more particularly described by the geographic coordinates:

39° 43' 45" North Latitude
105° 14' 06" West Longitude.

The proposed FM antenna will be side-mounted on a self-supporting tower with over-all height of 180 feet above ground and 7,470 feet above mean sea level. The topmost position of Lookout Mountain itself is at a height of 7,414 feet above mean sea level and a number of towers, with over-all height to as much as 8,147 feet above mean sea level, are in the near vicinity. The tower height above ground, the distance of more than six miles from the nearest landing field, and the shielding effect of the nearby structures eliminate the proposed tower as a potential hazard to air navigation. Pursuant to Part 77 of the Rules of the Federal Aviation Administration, no notification to that agency is required.

A map showing the proposed transmitter location and vicinity is included herein as Figure 2. A portion of a Sectional Aeronautical Chart showing the location of the site with respect to airports and airways in the vicinity is included as Figure 3, and a sketch showing the pertinent dimensions of the FM antenna and supporting structure is included as Figure 4.

Lookout Mountain is the site of a number of communications facilities in addition to the FM and television broadcast stations previously mentioned. No adverse interaction between KOSI-FM and other radio transmitting facilities employing Lookout Mountain is to be expected.

Proposed Equipment

The applicant proposes to employ an RCA type BTF-20E1 or other type accepted transmitter which has a power output rating of 20 kilowatts. The transmission line, which will deliver power from the transmitter to the antenna, will be Andrew Company type HJ8-50B coaxial cable having a nominal transverse diameter of three inches. The length of the transmission line will be 150 feet. The efficiency for that length line is 95 percent. The antenna to be employed is a circularly polarized RCA type BFC-12B modified by phase adjustment to provide one degree of electrical beam tilt and ten percent fill in the first null, which occurs at a depression angle of approximately 6.5 degrees. The power gain of the antenna, at the maximum one degree below the horizontal, will be 6.0 in the horizontal plane of polarization and the same value in the vertical plane of polarization. The vertical plane radiation pattern supplied by the manufacturer is included herein as Figure 10.

With transmitter power output of 17.55 kilowatts, and allowing for transmission line losses, the effective radiated power at the one degree depression angle will be 100 kilowatts in the horizontal plane of polarization and 100 kilowatts in the vertical plane of polarization.

Coverage Considerations

Locations of the predicted coverage contours were calculated in accordance with Section 73.313 of the Rules. Data determining the average elevation over a span of two to ten miles from the transmitter were obtained from United States Geological Survey topographic maps along radials

spaced at 45 degree intervals starting with true north. The terrain profile data permitted determination of the height of the antenna radiation center above average terrain. The distances to service contours in each radial direction were obtained employing the antenna height above average terrain in the particular direction in conjunction with the effective radiated power and the F(50,50) curves of Figure 1 of Section 73.333 of the Rules.

Reduced size maps showing the location of terrain profile radials are included herein as Figure 5. Profile graphs are shown in Figure 6, and a tabulation of average elevations and distances to coverage contours is included as Figure 7. The predicted 60 dBu and 70 dBu coverage contours for the proposed operation are shown in Figure 8 and a comparison of present and proposed 60 dBu contours is shown in Figure 9.

Allocation Considerations

With one exception, the use of Lookout Mountain as the transmitter location of KOSI-FM would comply with FCC specified minimum mileage separation to all assignments included in Section 73.202. The one exception is the assignment of channel 265A to Steamboat Springs, Colorado. The minimum mileage separation specified by the Rules for a Class A and a Class C station separated in frequency by 200 kHz is 105 miles. The actual separation here involved is 99.3 miles to the center of Steamboat Springs. No application for the facility has been filed as of this date. A request for waiver of the mileage separation rule, with respect to the Steamboat Springs assignment, is being made and is supported by a separate engineering statement, included herewith as an appendix.

Two petitions are pending for the assignment of FM channels to Vail, Colorado -- RM-1565 and RM-1582. No conflict exists with respect to RM-1565 proposing the assignment of 272A to Vail. The proposal in RM-1582 to assign channel 268 to Vail would involve short spacing to KOSI-FM operating at Lookout Mountain. The Commission has not issued a proposal for rule making in the matter of RM-1582.

The operation proposed by KOSI-FM is in compliance with the proposal by the Federal Communications Commission in Docket No. 18,180 to provide protection to the receiving site of the Research Laboratories of the Environmental Science Services Administration (ESSA). At a frequency of 101.1 MHz, the operating frequency of KOSI-FM, the permissible field strength would be 10 mv/m at the ESSA Table Mountain site. The distance from the proposed KOSI-FM location to the ESSA site, at geographic coordinates 40° 07' 50" North Latitude, 105° 14' 40" West Longitude, is 27.7 miles. The bearing is approximately one degree west of true north. The KOSI-FM field strength at Table Mountain, predicted in accordance with FCC Rules, will be approximately 8 mv/m.

Population Data

The population to be served within the 60 dBu contour was determined by assuming uniform distribution of population within each city and uniform distribution of population within the remaining rural area of each Census County Division. The Department of Commerce 1960 United States Census data were employed. Final 1970 data were not available at the time of preparation of this exhibit.

The population determined as described is 1,010,455. As illustrated in Figure 9, a small area to the southwest of Denver presently receives signal strength of 60 dBu or more but would not receive such field strenth from the proposed operation. The area is sparsely populated and a population analysis indicates that only 390 persons resided in that zone in 1960. By contrast, more than 100,000 additional persons will be included within the proposed 60 dBu contour who are not included within the present 60 dBu contour.

Conclusions

On the basis of the engineering study described herein, the following may be concluded:

1. All of Denver, Colorado, will be expected to receive signal strength in excess of 70 dBu.

2. The proposed transmitter relocation will not effect a change in multiple ownership considerations. The present 60 dBu contour of KOSI-FM and the proposed 60 dBu contour of KOSI-FM wholly enclose Aurora, Colorado, the community of license of KOSI(AM).

3. Except as noted, the operation proposed would meet all mileage separation requirements of the Commission Rules. With respect to the exception, a rule waiver is being requested.

Jules Cohen

Jules Cohen

February 5, 1971

ENGINEERING EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
ARMSTRONG BROADCASTING CORPORATION
STATION KOSI-FM
DENVER, COLORADO
CH 266 100 KW 780 FT

Engineering Specifications

Channel	266C
Frequency	101.1 MHz
Antenna arrangement	Side-mounted on self-supporting tower
Ground elevation above mean sea level	7290'
Height of FM antenna radiation center above mean sea level	7416'
Over-all height of antenna structure above mean sea level	7470'
Average elevation of radials, 2 to 10 miles	6631.4'
Height of proposed antenna radiation center above average terrain	784.6' (Rounded to 780')
Transmitter	
Type	RCA BTF-20E1
Rated power	20 kW
Transmission line	
Type	Andrew HJ8-50B
Nominal diameter	3"
Rated power input at 101.1 MHz	38 kW
Length	150'
Efficiency (0.225 dB loss)	95%

Antenna	
Type	RCA BFC-12B (with radome)
Number of bays	12
Electrical beam tilt	1°
Fill in first null	10%
Power gain (each polarization)	6.0
Operation	
Transmitter power output	17.55 kW
Antenna power input	16.67 kW
Effective radiated power	
Horizontally polarized	100 kW
Vertically polarized	100 kW

APPENDIX

ENGINEERING STATEMENT
IN SUPPORT OF REQUEST FOR WAIVER
OF SECTION 73.207 OF FCC RULES AND REGULATIONS

ARMSTRONG BROADCASTING CORPORATION
RADIO STATION KOSI-FM
DENVER, COLORADO

JULES COHEN & ASSOCIATES
CONSULTING ELECTRONICS ENGINEERS
WASHINGTON, D. C.

ENGINEERING STATEMENT
IN SUPPORT OF REQUEST FOR WAIVER
OF SECTION 73.207 OF FCC RULES AND REGULATIONS
ARMSTRONG BROADCASTING CORPORATION
RADIO STATION KOSI-FM
DENVER, COLORADO

Jules Cohen, being first duly sworn, says that he is a partner in the firm of Jules Cohen & Associates, consulting electronics engineers with offices in Washington, D. C., that he is a professional engineer registered in the District of Columbia and Commonwealth of Virginia, and that his qualifications as an engineering expert are a matter of record with the Federal Communications Commission. The instant engineering statement was prepared on behalf of Armstrong Broadcasting Corporation, licensee of FM broadcast station KOSI-FM, in support of a request for waiver of Section 73.207 of the Federal Communications Commission Rules and Regulations, and relates to an application by Armstrong Broadcasting Corporation to relocate KOSI-FM to Lookout Mountain and increase power and antenna height. The location proposed at Lookout Mountain is 99.3 miles from Steamboat Springs, Colorado, where the adjacent channel (265A) has been assigned. Section 73.207 specifies that the transmitter separation between Class C channel 266, the operating channel for KOSI-FM and channel 265A be not less than 105 miles.

Lookout Mountain is the de facto antenna farm for Denver, Colorado. All five of the Denver operating television stations employ transmitter sites on Lookout Mountain. The two outstanding construction permits for Denver television

stations also specify Lookout Mountain. Of the nine FM assignments in Denver (including KOSI-FM) four presently operate from Lookout Mountain. No Denver FM station with antenna height above average terrain in excess of 400 feet operates from a location other than Lookout Mountain.

In 1969, when the possibility of relocating KOSI-FM for the purpose of increasing antenna height and improving coverage was first considered by this office, studies showed that a transmitter site on Lookout Mountain would comply with the mileage separation requirements of the Rules. The Steamboat Springs assignment on channel 265A was made in May, 1970 and was overlooked until a review of mileage separations was undertaken in connection with preparation of the engineering exhibit in support of the KOSI-FM application for construction permit to change location. Channel 265A is assigned to Steamboat Springs by Section 73.202 of the Rules but no application has been filed for utilization of the channel at that location.

As illustrated on the profile graph included herein as Figure 1, the terrain between Lookout Mountain and Steamboat Springs is among the most rugged to be found anywhere in the United States. The height of the antenna radiation center at the proposed KOSI-FM site is 7,416 feet above mean sea level. The general elevation in the Steamboat Springs area is of the order of 7,000 feet above mean sea level. The path from Lookout Mountain to Steamboat Springs crosses the Continental Divide which, in the vicinity of the direct line, rises to a height in excess of 12,000 feet above mean sea level. Another high ridge farther along the path rises to a height in excess of 11,000 feet. Examination of maps

showing topographic data show that the direct line between the two locations in question is by no means unique. The Rocky Mountain chain forms an effective north-south barrier to a broad range of angles generally between Lookout Mountain and Steamboat Springs.

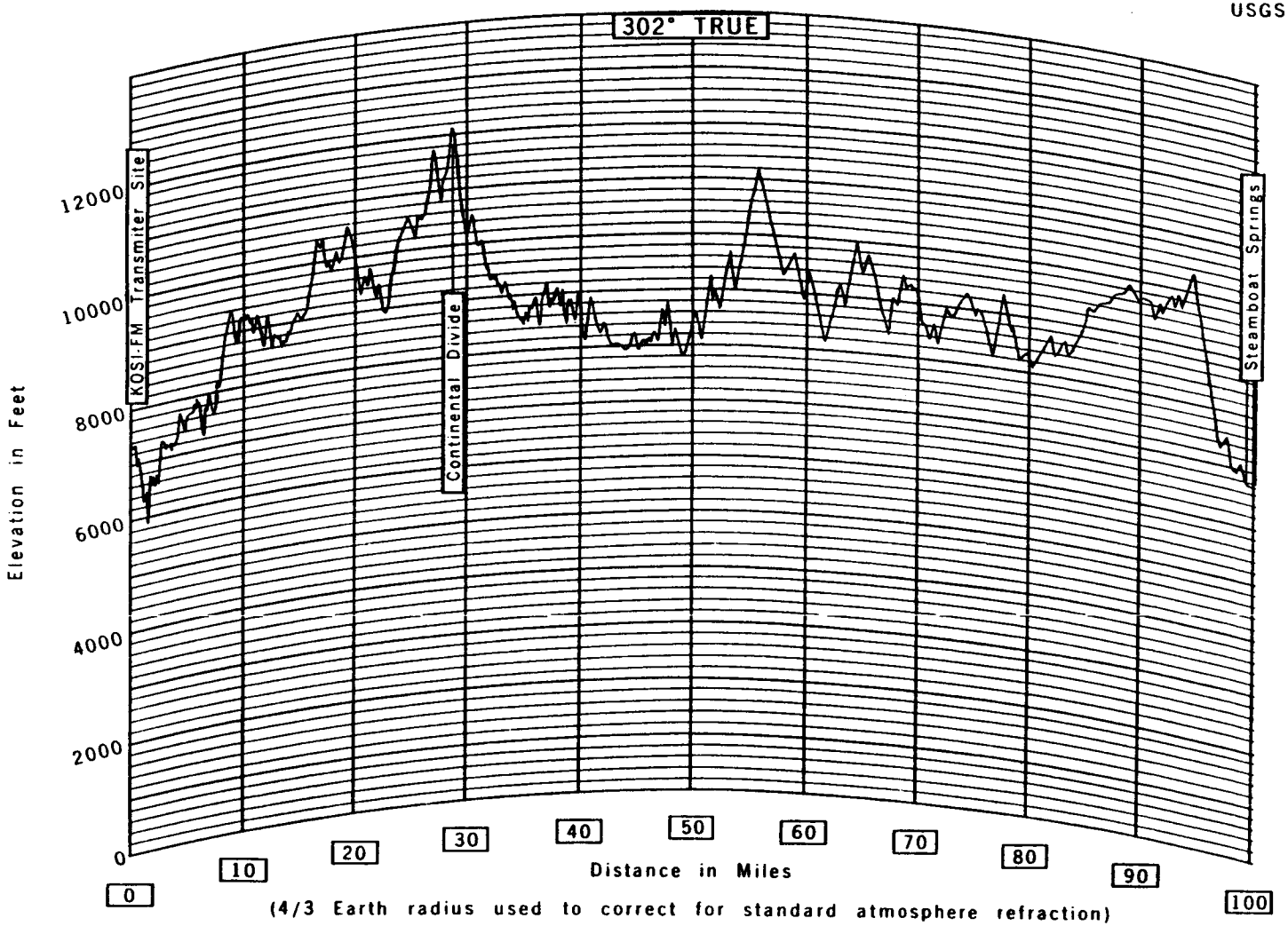
To analyze the effect of terrain on the propagation path between Lookout Mountain and Steamboat Springs, reference has been made to the Federal Communications Commission Office of Chief Engineer Research Division Report No. R-6602 entitled, Development of VHF and UHF Propagation Curves for TV and FM Broadcasting. That report provides a "roughness correction" as a function of wavelength and terrain height difference prevailing over 80 percent of the path lying at a distance between 6 and 31 miles from the transmitter. The correction factor calculated by application of the equation in Report R-6602 is -31.8 decibels (dB). A correction of this magnitude would have the effect of pulling back an F(50,50) contour by a distance of approximately 60 miles and an F(50,10) contour by a distance of approximately 80 miles.

Application of either propagation theory or practical experience dictates a conclusion that KOSI-FM, operating with maximum permitted effective radiated power at Lookout Mountain, and a maximum power facility at Steamboat Springs, would have far less effect upon each other at a

spacing of approximately 99 miles than facilities spaced at 105 miles with average, or even less rugged, terrain than contemplated in the preparation of the Commission's Table of Assignments.

FEBRUARY 1971

Elevation data from
USGS topographic maps



(4/3 Earth radius used to correct for standard atmosphere refraction)

TERRAIN PROFILE GRAPH

PROPOSED TRANSMITTER SITE TO STEAMBOAT SPRINGS, COLORADO

ARMSTRONG BROADCASTING CORPORATION
STATION KOSI-FM DENVER, COLORADO
CH 266 100 KW 780 FT

Jules Cohen & Associates Consulting Electronics Engineers

Figure 1

JULES COHEN & ASSOCIATES
CONSULTING ELECTRONICS ENGINEERS
WASHINGTON, D. C.

ENGINEERING EXHIBIT
APPLICATION FOR FM CONSTRUCTION PERMIT
ARMSTRONG BROADCASTING CORPORATION
STATION KOSI-FM
DENVER, COLORADO
CH 266 100 KW 780 FT

Affidavit

WASHINGTON)
) ss:
DISTRICT OF COLUMBIA)

Jules Cohen, being first duly sworn, says that he is a partner in the firm of Jules Cohen & Associates, consulting electronics engineers with offices in Washington, D. C.; that he is a professional engineer registered in the District of Columbia and the Commonwealth of Virginia; that his qualifications as an expert in radio engineering are a matter of record with the Federal Communications Commission; that the foregoing exhibit was prepared by him and under his direction; and that the statements contained therein are true of his own personal knowledge except those stated to be on information and belief, and as to those statements, he verily believes them to be true and correct.

s/ Jules Cohen

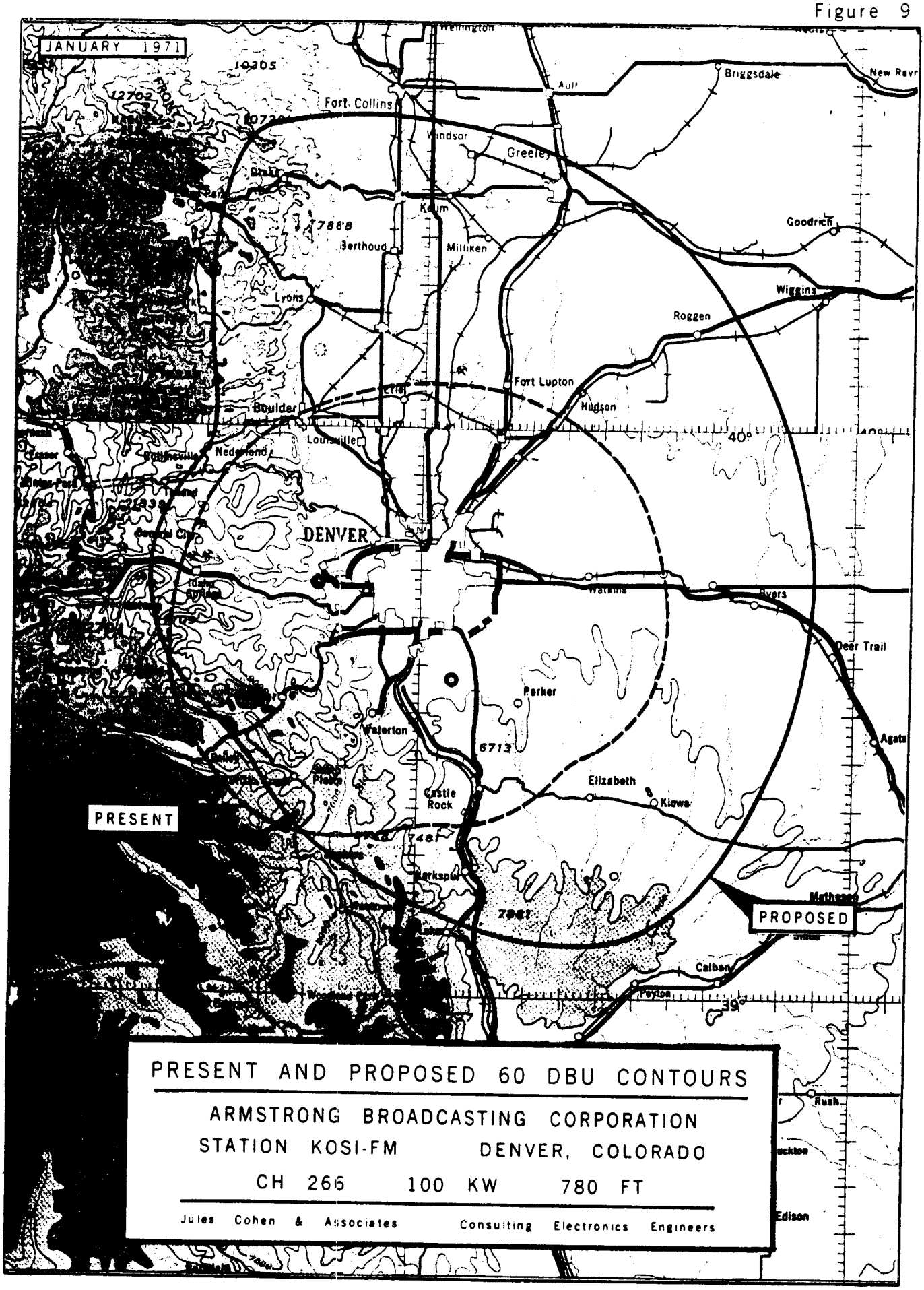
Subscribed and sworn to before me this 5th day of February, 1971.

s/ Anne Mazor
Notary Public, D. C.

My commission expires
October 31, 1971

(SEAL)

Figure 9



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